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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/816,856	03/22/2001	Masanori Asakura	81800.0151	6925

26021 7590 10/17/2005

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EXAMINER	
EDWARDS, PATRICK L	
ART UNIT	**PAPER NUMBER**
2621	

DATE MAILED: 10/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/816,856	ASAKURA, MASANORI	
	Examiner	Art Unit	
	Patrick L. Edwards	2621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 August 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-8* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. The response received on 08-01-2005 has been placed in the file and was considered by the examiner. An action on the merits follows.

Response to Arguments

2. The arguments filed on 08-01-2005 have been fully considered. A response to these arguments is provided below.

Prior Art Rejections

Summary of Argument:

1. Applicant alleges that Farwell does not perform the interpolation and thinning operations required by claims 1 and 5, respectively (see remarks, pg. 3).

response:

The claimed interpolation and thinning-out processes are merely intended uses recited in the preamble. The body of the claim does not incorporate these elements, and thus they are not required by the positively recited limitations. Accordingly, they are not "limitations" in that they are not given any patentable weight.

2. Applicant alleges that Farwell is not directed to processing "a pseudo gray-scale image [or] a bi-level image" (see remarks pg. 5).

response:

The examiner agrees—and has explicitly conceded—that Farwell does not teach this feature. However, this deficiency is cured by the Li reference.

3. Applicant alleges that the combination of Farwell and Li is improper. Specifically, applicant argues that it makes no sense to modify Farwell—a reference concerned with converting color images to gray scale imags—to include the ability to distinguish between gray scale and bi-level images and adjust its processing accordingly.

response:

Applicant's arguments have been considered but are wholly unpersuasive. The claims' distinction between gray-scale and bi-level has nothing to do with color. The images are being distinguished as being continuous/half-tone (gray-scale) or binary/text (bi-level). This distinction is made because the processing has a different effect on a text image than it does on a picture image. Similarly, the projected image in Farwell could contain both continuous picture image areas and text areas. Farwell discloses an example of a projection of a business presentation (see Farwell col. 1), and the possibility of such a business presentation (e.g. a Power-Point presentation) containing both text and pictures does not seem far-fetched. Indeed, such presentations often contain both types of image areas.

The area-distinguishing aspect of Li is thus compatible with Farwell because it would be advantageous to make the Farwell system robust enough to correctly process these types of images. Such a robust system can be achieved by modifying Farwell to distinguish between different images types and process accordingly.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1, 2, 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Farwell et al. (US Pat. No. 5,062,001) and Li et al. (USPN 6,529,629).

With regard to claims 1, 2, 5 and 6 Farwell et al. discloses keeping a final enumerated value of the counter for a former unit instead of resetting the final enumerated value (col. 4 line 66 – col. 5 line 11 with Figure 1). Farwell discloses a counter (element 42 of Figure 1) that counts up to a number that doesn't divide evenly into the number of clocked positions (i.e. the number of pixels on a line of pixel data). It follows that Farwell discloses keeping the final enumerated value of the counter for a previous line of pixel of data (i.e. a former unit) instead of resetting the final enumerated value. Farwell further discloses that the above operation is performed on pseudo gray-scale pixel data (Farwell col. 3 lines 50-66 in conjunction with figure 3: The reference describes that various shades of grey are represented by groups of binary pixels. Thus, the image in Farwell qualifies as the claimed pseudo gray-scale image).

Farwell further discloses resetting a counter at the end of the previous line of pixel data. Farwell discloses a counter (element 42 of Figure 1) which counts the last pixel data of the previous scanning line.

Farwell further discloses carrying out a counting processing at a beginning of a current unit with a consecutive enumerated value from the kept final enumerated value (col. 10 lines 60-66).

Farwell fails to expressly disclose the step of determining if the pixel data corresponds to a pseudo gray-scale image or a bi-level image. It follows that Farwell also fails to expressly disclose resetting the counter at the end of a line if the pixel data corresponds to a bi-level image.

Li, on the other hand, discloses determining if the pixel data corresponds to a pseudo gray-scale image or a bi-level image (Li col. 1, lines 29-38: The references describes the identification of halftone areas (i.e. pseudo gray-scale) and bi-level areas (i.e. text)). Li further discloses processing the image to remove moire patterns only in the halftone areas of the image. This reference is therefore combinable with Farwell, which teaches the removal of image flicker (i.e. a moire pattern) (Farwell col. 1 lines 43-49). It would have been obvious to one reasonably skilled in the art at the time of the invention to modify the Farwell disclosure by adding the ability to identify image regions and adjust the type of image processing accordigly as taught by Li (Li col. 1 lines 21-38). Such a

modification would have allowed for a more robust system that could remove moire patterns from the halftone area of an image (see Farwell col. 1 lines 45-50 & Li col. 1 lines 34-36) while performing a different type of processing (i.e. not removing moire patterns) in the bi-level area of the image (Li col. 1 lines 36-38).

5. Claims 3-4 and 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Farwell and Li as applied to claims 1 and 5 above, and further in view of Honma et al. (USPN 5,280,348). The arguments as to the relevance of Farwell and Li as applied above are incorporated herein.

With regard to claims 3 and 7, the combination of Farwell and Li fails to expressly disclose a memory for storing and reading pixel data in synchronization with a write and read clock, respectively. It also fails to expressly disclose that the pixel data is interpolated by sub-sampling the write clock and decimated (thinned-out) by sub-sampling the read clock.

Honma, however, discloses a memory for storing and reading pixel data in synchronization with a write and read clock, respectively (Honma col. 9 lines 10-15 in conjunction with Figure 2B).

Honma further discloses interpolating (enlarging) the pixel data by thinning out the write clock, and decimating (or reducing) the pixel data by thinning out the read clock. (Honma col. 9 line 45 – col. 10 line 5 in conjunction with Figures 13 and 14(a-b)).

It would have been obvious to one reasonably skilled in the art at the time of the invention to modify Farwell and Li's image processing method by thinning out a write clock in order to enlarge an image, and thinning out a read clock in order to reduce the image as taught by Homna. Such a modification would have allowed for an image processing method that could both reduce and increase pixel data of an image using algorithm's that were efficient, easy to implement and well known in the art. This would have made for a more robust and useful system. It also would have been obvious to one reasonably skilled in the art at the time of the invention to add a memory for reading and writing pixel as taught by Homna to Farwell's image processing system. Such a modification would have allowed for a more robust image processing method that could be performed as the image was being read in, or after a read-in operation had already occurred.

With regard to claims 4 and 8, Homna further discloses that the thinning of the write and read clocks is in accordance with a value (M) set in a register (Homna col. 9 line 61).

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period,

then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick L Edwards whose telephone number is (571) 272-7390. The examiner can normally be reached on 8:30am - 5:00pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joe Mancuso can be reached on (571) 272-7695. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Patrick L Edwards Art Unit 2621

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ANDREW W. JOHNS
PRIMARY EXAMINER